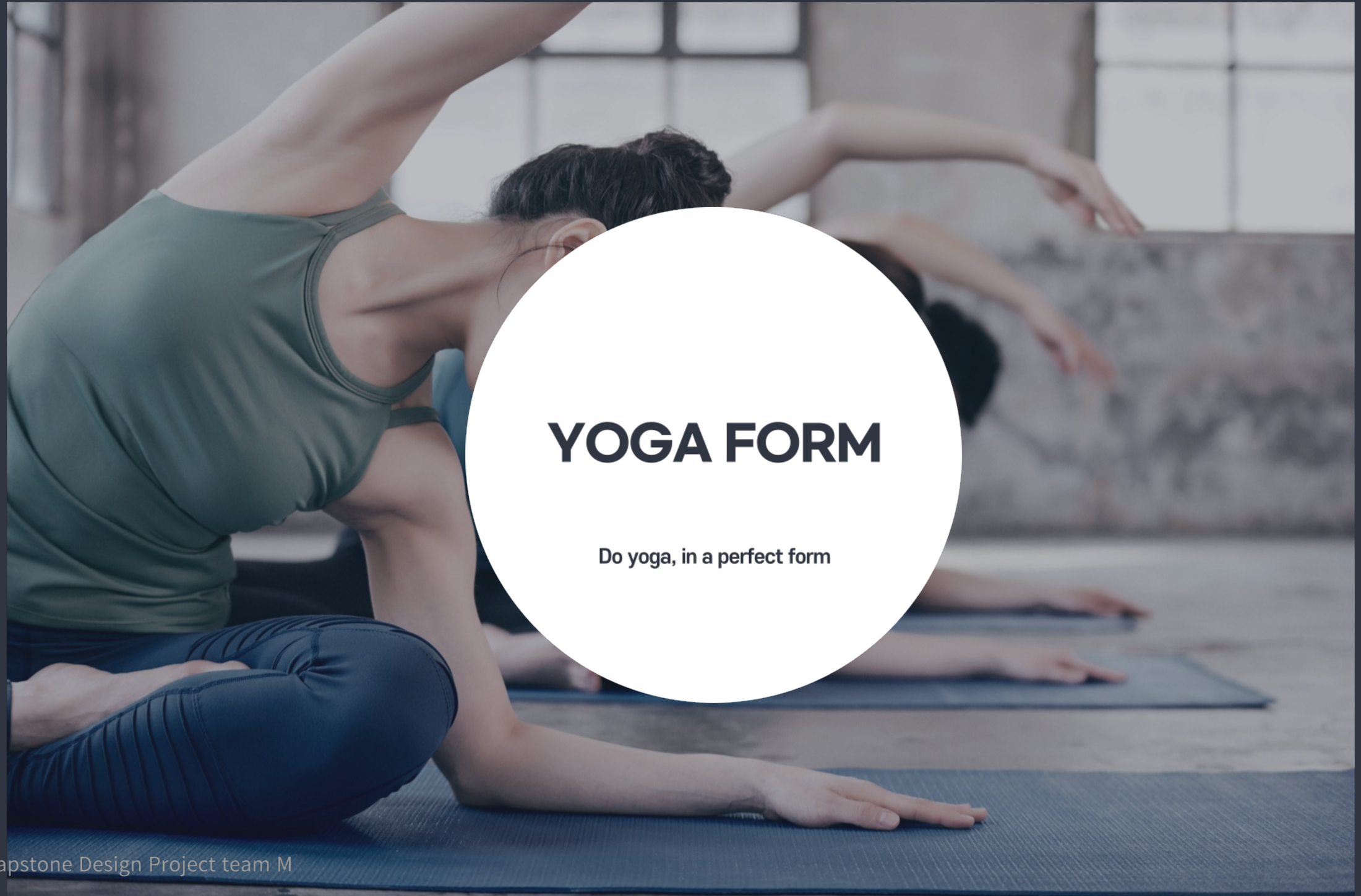
YOGA FORM
Do yoga, in a perfect form

Contents

01 Background

02 Related Work

03 Problem

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05 Method

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08 Project Usefulness

BACKGROUND

1. Growth in the Health & Fitness App Market

2. Increasing Cases of AI Application to Health & Fitness App Market

GYM

A-SQUAT

GOLF

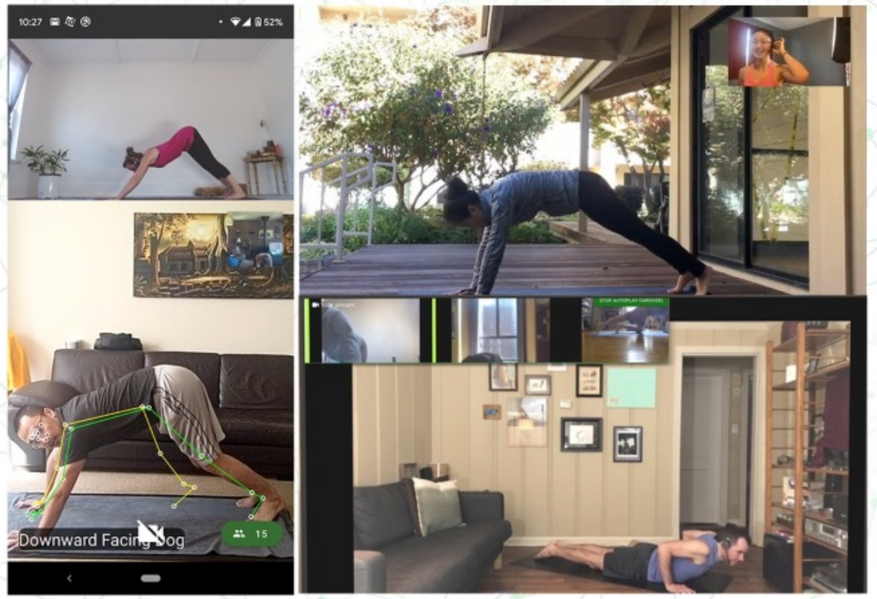
9Poses

YOGA

MixPose

RELATED WORK

mixpose.com



- yoga group class online
- live streaming
- analyze students' yoga poses using AI

Limitation

- only analyze the overall accuracy (not specific)
- need an expert

PROBLEM

BACKGROUND

Yoga doesn't require much equipment
Good to try at home alone

PROBLEM

Hard to tell if the posture is correct doing yoga alone

DETAIL

No big mirror in the house
Hard to look away during yoga

DEMAND

Samsung-YogoFi yoga mat
Lots of content about "Home Yoga"

SOLUTION

	accuracy
right arm	70%
left arm	89%
waist	45%

YOGA FORM

Home Yoga App with AI Pose Estimation

- Main Function
  a. recognize the angle of the joint
  b. calculate the difference from the standard pose
  c. guide to fix the posture using TTS

- Web Application
  - considering screen size and camera angle adjustment

HOW?

1) DATASET

The **yoga video data** of

` 50 yoga postures

` taken from 8 cameras

` 120 people

VIDEO IMAGE

	A	B	C	D	E	F	G
1	img_name	Head_x	Head_y	LShoulder	LShoulder	RShoulder	RShoulder
2	000000.jpg	1192.166	660.5535	1272.048	753.1736	1111.024	750.3371
3	000001.jpg	1194.281	663.1309	1273.259	753.8395	1113.457	751.1576
4	000002.jpg	1192.271	662.2419	1270.808	751.9747	1111.411	751.9573
5	000003.jpg	1192.065	660.8879	1271.353	753.1137	1111.693	750.8469
6	000004.jpg	1191.835	661.526	1271.168	753.3134	1114.761	751.3877
7	000005.jpg	1191.858	661.0373	1272.953	753.3069	1114.219	752.0352
8	000006.jpg	1192.044	660.4946	1268.518	753.8681	1114.431	751.6749
9	000007.jpg	1191.671	661.2721	1272.136	753.8132	1112.277	750.4945
10	000008.jpg	1191.842	661.5521	1273.088	753.5595	1112.646	750.8143
11	000009.jpg	1191.647	662.0802	1269.703	752.7726	1112.335	751.2563
12	000010.jpg	1191.815	662.818	1271.046	753.1515	1112.494	751.6212

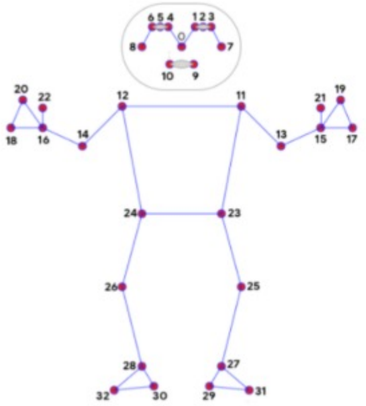
KEYPOINTS

411 timesteps * 20 keypoints

2) MODEL

Video pose recognition library

- Media Pipe
- PoseNet



0. nose
1. left_eye_inner
2. left_eye
3. left_eye_outer
4. right_eye_inner
5. right_eye
6. right_eye_outer
7. left_ear
8. right_ear
9. mouth_left
10. mouth_right
11. left_shoulder
12. right_shoulder
13. left_elbow
14. right_elbow
15. left_wrist
16. right_wrist
17. left_pinky
18. right_pinky
19. left_index
20. right_index
21. left_thumb
22. right_thumb
23. left_hip
24. right_hip
25. left_knee
26. right_knee
27. left_ankle
28. right_ankle
29. left_heel
30. right_heel
31. left_foot_index
32. right_foot_index

YOGA FORM

THE TWO MAIN FUNCTIONS OF
'YOGA FORM'

YOGA COACH

ANALYZE YOUR YOGA POSTURE IN JOINTS
AND ACHIEVE ACCURATE POSTURES!

YOGA ROUTINE

ADD YOUR OWN ROUTINE TO THE PROGRAM!
(DEFAULT WOULD BE GIVEN)

COLLABORATION

AI RESEARCH

1) AI training with yoga data (1 人)

송재현

2) Yoga posture corrective with joint measurement (2 人)

노최유하, 김혜인

3) AI modeling and final training (3 人)

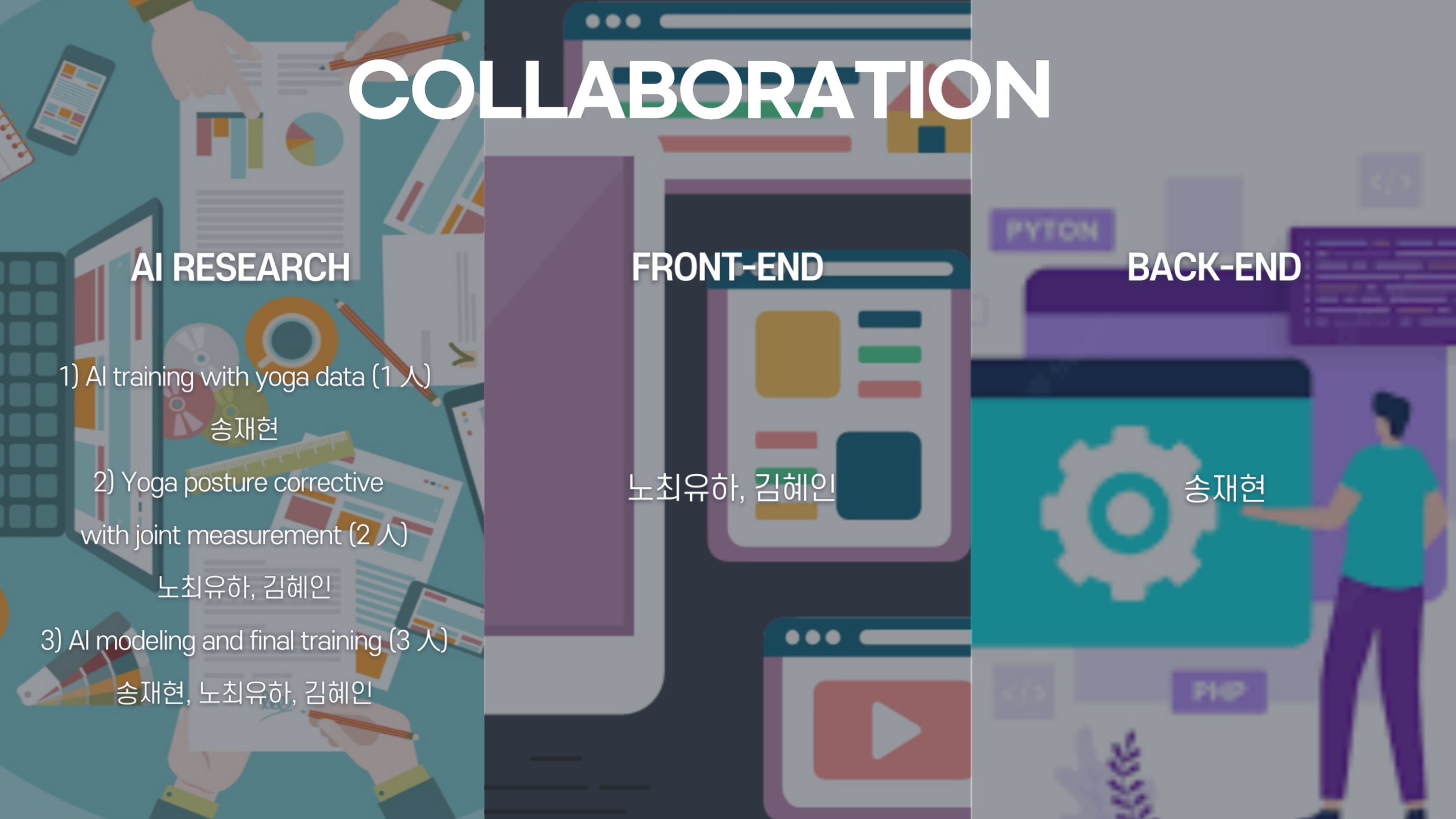
송재현, 노최유하, 김혜인

FRONT-END

노최유하, 김혜인

BACK-END

송재현



SCHEDULE

	3	4	5	6	7	8	9	10	11	12	13	14	15
Topic Selection													
AI training with sample data													
UI / Framework setting													
Data acquisition/ AI training													
Joint training													
Front end/ Back end building													
Paper writing													

Project Usefulness

01

SPECIFIC FEEDBACK

Customized yoga posture coach that provides specific feedback

02

PERSONAL YOGA

Correct the posture while doing yoga alone

03

YOGA SEARCH

Find the name of the yoga posture by your movement

Thank you!

YOGA FORM